



SAFETY DATA SHEET

Issue Date 02-Mar-2017

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Version 1

Section 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Product Code PM021
Product Name Copper Nickel Alloy Powder

Synonyms Copper Nickel Alloy Powder: Cu-30Ni, UNS C71500
Contains Nickel

1.2. Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Alloy product manufacture

Uses advised against

1.3. Details of the supplier of the safety data sheet

Manufacturer Address
ATI, 1000 Six PPG Place, Pittsburgh, PA 15222 USA

1.4. Emergency telephone number

Emergency Telephone Chemtrec: +1-703-741-5970

Section 2: HAZARDS IDENTIFICATION

This product is an article and, as such, does not present a hazard to human health by inhalation or ingestion

2.1. Classification of the substance or mixture

Regulation (EC) No 1272/2008

Acute toxicity - Oral	Category 4
Skin sensitisation	Category 1
Carcinogenicity	Category 2
Specific target organ toxicity (repeated exposure)	Category 1
Acute aquatic toxicity	Category 1
Chronic aquatic toxicity	Category 3

2.2. Label elements

Emergency Overview

Danger

Hazard statements

Harmful if swallowed
May cause an allergic skin reaction
Suspected of causing cancer
Causes damage to the respiratory tract through prolonged or repeated exposure if inhaled
Very toxic to aquatic life
Harmful to aquatic life with long lasting effects

**Appearance** Powder**Physical state** Solid**Odour** Odourless**Precautionary Statements - Prevention**

Do not handle until all safety precautions have been read and understood

Use personal protective equipment as required

Wear protective gloves

Wash hands thoroughly after handling

Do not eat, drink or smoke when using this product

Avoid breathing dust/fume

Avoid release to the environment

Wash contaminated clothing before reuse

If skin irritation or rash occurs: Get medical advice/attention

IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell

Collect spillage

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

2.3 Hazards not otherwise classified (HNOC)

Not applicable

Other Information

When product is subjected to welding, burning, melting, sawing, brazing, grinding, buffing, polishing, or other similar heat-generating processes, the following potentially hazardous airborne particles and/or fumes may be generated: Zinc, copper, magnesium, or cadmium fumes may cause metal fume fever.

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances**Synonyms**

Copper Nickel Alloy Powder: Cu-30Ni, UNS C71500.

Chemical Name	EC No	CAS No	Weight-%
Copper	231-159-6	7440-50-8	66 - 71
Nickel	231-111-4	7440-02-0	29 - 33
Manganese	231-105-1	7439-96-5	0.2 - 1.0

Section 4: FIRST AID MEASURES

4.1. Description of first aid measures**Inhalation**

If excessive amounts of smoke, fume, or particulate are inhaled during processing, remove to fresh air and consult a qualified health professional.

Skin Contact

In the case of skin irritation or allergic reactions see a doctor. Wash off immediately with soap and plenty of water.

Eye contact

In the case of particles coming in contact with eyes during processing, treat as with any foreign object.

Ingestion IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms May cause allergic skin reaction. May cause acute gastrointestinal effects if swallowed.

4.3. Indication of any immediate medical attention and special treatment needed

Note to doctors Treat symptomatically.

Section 5: FIRE FIGHTING MEASURES

5.1. Extinguishing media

Suitable extinguishing media

Product not flammable in the form as distributed, flammable as finely divided particles or pieces resulting from processing of this product.

Small Fire Smother with salt (NaCl) or class D dry powder fire extinguisher.

Large Fire Isolate fire and allow to burn out.

Unsuitable extinguishing media

Do not spray water on burning metal as an explosion may occur. This explosive characteristic is caused by the hydrogen and steam generated by the reaction of water with the burning material

5.2. Special hazards arising from the substance or mixture

Intense heat. WARNING: Fine particles of this product may form combustible dust-air mixtures. Keep particles away from all ignition sources including heat, sparks, and flame. Prevent dust accumulations to minimise combustible dust hazard

Hazardous combustion products Zinc, copper, magnesium, or cadmium fumes may cause metal fume fever.

5.3. Advice for firefighters

Wear self-contained breathing apparatus and protective suit. Use personal protective equipment as required.

Section 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions

Use personal protective equipment as required.

For emergency responders

Use personal protective equipment as required. Follow Emergency Response Guidebook, Guide No. 171, EXCEPT for FIRE follow Emergency Response Guidebook, Guide No. 170.

6.2. Environmental precautions

Collect spillage to prevent release to the environment.

6.3. Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Sweep or shovel material into dry containers. Avoid creating uncontrolled dust.

6.4. Reference to other sections

See Section 12: ECOLOGICAL INFORMATION.

Section 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Advice on safe handling

WARNING: Fine particles of this product may form combustible dust-air mixtures. Keep particles away from all ignition sources including heat, sparks, and flame. Prevent dust accumulations to minimise combustible dust hazard.

General Hygiene Considerations

Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities

Storage Conditions

Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity).

Incompatible materials

Dissolves in hydrofluoric acid.

7.3. Specific end use(s)

Risk Management Methods (RMM)

The information required is contained in this Safety Data Sheet.

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Chemical Name	European Union	United Kingdom	France	Spain	Germany
Copper 7440-50-8	-	STEL: 0.6 mg/m ³ STEL: 2 mg/m ³ TWA: 0.2 mg/m ³ TWA: 1 mg/m ³	TWA: 0.2 mg/m ³ TWA: 1 mg/m ³ STEL: 2 mg/m ³	TWA: 0.2 mg/m ³ TWA: 1 mg/m ³	TWA: 0.1 mg/m ³ Ceiling / Peak: 0.2 mg/m ³
Nickel 7440-02-0	-	STEL: 1.5 mg/m ³ TWA: 0.5 mg/m ³	TWA: 1 mg/m ³	TWA: 1 mg/m ³	Skin
Manganese 7439-96-5	-	STEL: 1.5 mg/m ³ TWA: 0.5 mg/m ³	TWA: 1 mg/m ³	TWA: 0.2 mg/m ³	TWA: 0.2 mg/m ³ TWA: 0.02 mg/m ³ Ceiling / Peak: 1.6 mg/m ³ Ceiling / Peak: 0.16 mg/m ³ TWA: 0.5 mg/m ³
Chemical Name	Italy	Portugal	Netherlands	Finland	Denmark
Copper 7440-50-8	-	TWA: 0.2 mg/m ³ TWA: 1 mg/m ³	TWA: 0.1 mg/m ³	TWA: 1 mg/m ³ TWA: 0.1 mg/m ³	TWA: 1.0 mg/m ³ TWA: 0.1 mg/m ³
Nickel 7440-02-0	-	TWA: 1.5 mg/m ³	-	TWA: 1 mg/m ³ TWA: 0.1 mg/m ³	TWA: 0.05 mg/m ³
Manganese 7439-96-5	-	TWA: 0.2 mg/m ³	-	TWA: 0.2 mg/m ³ TWA: 0.1 mg/m ³	TWA: 0.2 mg/m ³ TWA: 0.1 mg/m ³
Chemical Name	Austria	Switzerland	Poland	Norway	Ireland
Copper 7440-50-8	STEL 4 mg/m ³ STEL 0.4 mg/m ³ TWA: 1 mg/m ³ TWA: 0.1 mg/m ³	STEL: 0.2 mg/m ³ TWA: 0.1 mg/m ³	TWA: 0.2 mg/m ³	TWA: 0.1 mg/m ³ TWA: 1 mg/m ³ STEL: 0.3 mg/m ³ STEL: 3 mg/m ³	TWA: 0.2 mg/m ³ TWA: 1 mg/m ³ STEL: 2 mg/m ³
Nickel 7440-02-0	-	TWA: 0.5 mg/m ³	TWA: 0.25 mg/m ³	TWA: 0.05 mg/m ³ STEL: 0.15 mg/m ³	TWA: 0.5 mg/m ³
Manganese 7439-96-5	STEL 2 mg/m ³ TWA: 0.5 mg/m ³	TWA: 0.5 mg/m ³	TWA: 0.3 mg/m ³	TWA: 1 mg/m ³ TWA: 0.1 mg/m ³ STEL: 3 ppm STEL: 0.3 mg/m ³	TWA: 0.2 mg/m ³ STEL: 3 mg/m ³

Derived No Effect Level (DNEL)

No DNELs are available for this product as a whole

Predicted No Effect Concentration (PNEC) No PNECs are available for this product as a whole.

8.2. Exposure controls

Engineering Controls Avoid generation of uncontrolled particles.

Personal protective equipment

Eye/face protection

When airborne particles may be present, appropriate eye protection is recommended. For example, tight-fitting goggles, foam-lined safety glasses or other protective equipment that shield the eyes from particles.

Skin and body protection

Wear fire/flame resistant/retardant clothing. Wear protective gloves.

Respiratory protection

When particulates/fumes/gases are generated and if exposure limits are exceeded or irritation is experienced, proper approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminate concentrations. Respiratory protection must be provided in accordance with current local regulations.

Environmental exposure controls Section 6: ACCIDENTAL RELEASE MEASURES.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid	Odour	Odourless
Appearance	Powder	Odour threshold	Not applicable
Colour	metallic dark red		

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	-	
Melting point/freezing point	1215 °C / 2220 °F	
Boiling point / boiling range	-	
Flash point	-	
Evaporation rate	-	Not applicable
Flammability (solid, gas)	-	Product not flammable in the form as distributed, flammable as finely divided particles or pieces resulting from processing of this product
Flammability Limit in Air		
Upper flammability limit:	-	
Lower flammability limit	-	
Vapour pressure	-	Not applicable
Vapour density	-	Not applicable
Specific Gravity	8.0 - 8.9	
Water solubility	Insoluble	Insoluble
Solubility(ies)		Not applicable
Partition coefficient	-	Not applicable
Autoignition temperature	-	Not applicable
Decomposition temperature	-	Not applicable
Kinematic viscosity	-	Not applicable
Dynamic viscosity	-	Not applicable
Explosive properties	Not applicable	
Oxidising properties	Not applicable	

9.2. Other information

Softening point	-
Molecular weight	-
VOC Content (%)	Not applicable
Density	-
Bulk density	-

Section 10: STABILITY AND REACTIVITY

10.1. Reactivity

Not applicable

10.2. Chemical stability

Stable under normal conditions.

Explosion data

Sensitivity to Mechanical Impact None.
Sensitivity to Static Discharge None.

10.3. Possibility of hazardous reactions

Hazardous polymerisation

Hazardous polymerisation does not occur.

Possibility of Hazardous Reactions

None under normal processing.

10.4. Conditions to avoid

Dust formation and dust accumulation;

10.5. Incompatible materials

Dissolves in hydrofluoric acid.

10.6. Hazardous decomposition products

Not applicable.

Section 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Product Information

Inhalation	Suspected of causing cancer if inhaled. Causes damage to the respiratory tract through prolonged or repeated exposure if inhaled.
Eye contact	Product not classified.
Skin Contact	May cause sensitisation by skin contact.
Ingestion	Harmful if swallowed.
Unknown Acute Toxicity	

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Copper	481 mg/kg bw	>2000 mg/kg bw	>5.11 mg/L
Nickel	> 9000 mg/kg bw	-	> 10.2 mg/L
Manganese	>2000 mg/kg bw	-	>5.14 mg/L

Information on toxicological effects

Symptoms May cause sensitisation by skin contact. May cause acute gastrointestinal effects if swallowed.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Acute toxicity	Harmful if swallowed.
Skin corrosion/irritation	Product not classified.
Serious eye damage/eye irritation	Product not classified.
Sensitisation	May cause sensitisation by skin contact.

Germ cell mutagenicity Product not classified.

Carcinogenicity May cause cancer by inhalation.

Chemical Name	ACGIH	IARC	NTP	OSHA
Nickel 7440-02-0		Group 1 Group 2B	Known Reasonably Anticipated	X

Reproductive toxicity Product not classified.

STOT - single exposure Product not classified.

STOT - repeated exposure Causes disorder and damage to the: Respiratory System.

Aspiration hazard Product not classified.

Section 12: ECOLOGICAL INFORMATION

12.1. Toxicity

This product contains a chemical which is listed as a severe marine pollutant according to IMDG/IMO

This product as shipped is classified for aquatic chronic toxicity. This product as shipped is classified for aquatic acute toxicity.

Chemical Name	Algae/aquatic plants	Fish	Toxicity to Micro-organisms	Crustacea
Copper	The 72 h EC50 values of copper chloride to <i>Pseudokirchneriella subcapitata</i> ranged between 30 µg/L (pH 7.02, hardness 250 mg/L CaCO ₃ , DOC 1.95 mg/L) and 824 µg/L (pH 6.22, hardness 100 mg/L CaCO ₃ , DOC 15.8 mg/L).	The 96-hr LC50 for <i>Pimephales promelas</i> exposed to Copper sulfate ranged from 256.2 to 38.4 µg/L with water hardness increasing from 45 to 255.7 mg/L.	The 24 h NOEC of copper chloride for activated sludge ranged from 0.32 to 0.64 mg of Cu/L.	The 48 h LC50 values for <i>Daphnia magna</i> exposed to copper in natural water ranged between 33.8 µg/L (pH 6.1, hardness 12.4 mg/L CaCO ₃ , DOC 2.34 mg/L) and 792 µg/L (pH 7.35, hardness 139.7 mg/L CaCO ₃ , DOC 22.8 mg/L).
Nickel	NOEC/EC10 values range from 12.3 µg/l for <i>Scenedesmus accuminatus</i> to 425 µg/l for <i>Pseudokirchneriella subcapitata</i> .	The 96h LC50s values range from 0.4 mg Ni/L for <i>Pimephales promelas</i> to 320 mg Ni/L for <i>Brachydanio rerio</i> .	The 30 min EC50 of nickel for activated sludge was 33 mg Ni/L.	The 48h LC50s values range from 0.013 mg Ni/L for <i>Ceriodaphnia dubia</i> to 4970 mg Ni/L for <i>Daphnia magna</i> .
Manganese	The 72 h EC50 of manganese to <i>Desmodesmus subspicatus</i> was 2.8 mg of Mn/L.	The 96 h LC50 of manganese to <i>Oncorhynchus mykiss</i> was greater than 3.6 mg of Mn/L.	The 3 h EC50 of manganese for activated sludge was greater than 1000 mg/L.	The 48 h EC50 of manganese to <i>Daphnia magna</i> was greater than 1.6 mg/L.

12.2. Persistence and degradability

12.3. Bioaccumulative potential

12.4. Mobility in soil

12.5. Results of PBT and vPvB assessment

The PBT and vPvB criteria do not apply to inorganic substances.

12.6. Other adverse effects

Section 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste from residues/unused products	Disposal should be in accordance with applicable regional, national and local laws and regulations.
Contaminated packaging	Disposal should be in accordance with applicable regional, national and local laws and regulations.

Section 14: TRANSPORT INFORMATION

IMDG

14.1 UN/ID no	-
14.2 Proper shipping name	Regulated per IMDG, if transported in bulk or by vessel: UN/ID No. 3077 Environmentally hazardous substance, solid, n.o.s. (nickel/copper alloy powder)
14.3 Hazard Class	9
14.4 Packing Group	III
14.5 Marine pollutant	This product contains a chemical which is listed as a severe marine pollutant according to IMDG/IMO
Environmental hazard	-
14.6 Special Provisions	8, 146, 335, A112, B54, B120, IB8, IP3, N20, N91, T1, TP33
14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	-

RID

14.1 UN/ID no	Not regulated
14.2 Proper shipping name	Not regulated
14.3 Hazard Class	Not regulated
14.4 Packing Group	Not regulated
14.5 Environmental hazard	-
14.6 Special Provisions	None

ADR

14.1 UN/ID no	Not regulated
14.2 Proper shipping name	Not regulated
14.3 Hazard Class	Not regulated
14.4 Packing Group	Not regulated
14.5 Environmental hazard	-
14.6 Special Provisions	None

ICAO (air)

14.1 UN/ID no	Not regulated
14.2 Proper shipping name	Not regulated
14.3 Hazard Class	Not regulated
14.4 Packing Group	Not applicable
14.5 Environmental hazard	-
14.6 Special Provisions	None

IATA

14.1 UN/ID no	Not regulated
14.2 Proper shipping name	Not regulated
14.3 Hazard Class	Not regulated
14.4 Packing Group	Not regulated
Description	Not applicable
14.5 Environmental hazard	-
14.6 Special Provisions	None

Section 15: REGULATORY INFORMATION

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

Chemical Name	French RG number	Title
Copper 7440-50-8	-	-
Nickel 7440-02-0	RG 37ter	-
Manganese 7439-96-5	-	-

European Union

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work

Authorisations and/or restrictions on use:

This product does not contain substances subject to authorisation (Regulation (EC) No. 1907/2006 (REACH), Annex XIV). This product does not contain substances subject to restriction (Regulation (EC) No. 1907/2006 (REACH), Annex XVII).

International Inventories

TSCA	Complies
DSL/NDSL	Complies
EINECS/ELINCS	Complies
ENCS	Complies
IECSC	Complies
KECL	Complies
PICCS	Complies
AICS	Complies

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances

15.2. Chemical safety assessment

No chemical safety assessment has been performed for this product.

Section 16: OTHER INFORMATION

Issue Date	02-Mar-2017
Revision Date	08-Mar-2017
Revision Note	Updated to comply with GHS.

This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006

Note:

The information provided in this Material Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to

the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet

Additional information available from:

Safety data sheets and labels available at ATImetals.com